Glastonbury bowl is that of the goldsmiths of Mykenæ. The whole evidence points to a wide intercourse with the other British tribes, as well as to a commerce with those of the Continent, extending so far south as the highly civilised peoples of the Mediterranean. It falls in line with that offered by other discoveries recorded in other parts of Britain, in settlements and tombs, by General Pitt-Rivers, Sir Arthur J. Evans, and others, proving that the inhabitants of Britain were highly civilised, and were not isolated from the high Mediterranean culture for some two hundred years before the Roman conquest.

We may infer from the absence of Roman remains that the lake village was abandoned before the influence of Rome was felt in Somerset. All doubt, however, as to this point is removed by the recent explorations of Wookey Hole Cavern, where the group of objects in the lake villages was found in five well-defined layers underneath two superficial strata of Roman age, the latter being dated by the coins, ranging from the time of Vespasian (A.D. 69–79) to Valentinian II. (A.D. 375–392). Here we have proof that the civilisation of the prehistoric Iron age was pre-Roman, and that it ended in Somerset with the Roman conquest. It has been traced in other parts of Britain so far back as 150 to 200 B.C.

The lake villagers were of pure Iberic stock, without admixture with other races. They belong to the small aborigines in Britain in the Neolithic age, characterised by long or oval heads, who were conquered in the Bronze age by the invading Goidels, and in the prehistoric Iron age by the invading Brythons, both of whom have left their mark in the topography of the district, by river names, such as the Axe (Goidelic) and the Avon (Brythonic for water), and hill names, such as Dundry dun (Goid) = fort, Mendips Maen (Bryth) = stone, Pen (Bryth) = hill. From these it may be concluded that the language spoken by the lake villagers was closely allied to the Welsh. They were closely related to the Silures, the ruling tribe in South Wales at the time of the Roman conquest.

The village was sacked, and, as the skulls exhibited show, the inhabitants had been massacred, probably during the conquest of that region by the Belgic tribes, whose further progress was arrested by the Romans. This remarkable discovery is being followed up by the examination of another lake village at Meare, on the same waterway, and belonging to the same pre-Roman age. The first volume was published in 1911, and the second is now nearly completed. When the whole story is told, by Bulleid and Gray and the other contributors to "The Lake Village of Glastonbury," it will fill a blank in the prehistory of Britain, and form a sound basis for history.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

MR. T. E. GORDON has been appointed professor of surgery in Trinity College, Dublin, in succession to Prof. E. H. Taylor.

THE Astley Cooper prize for the present year, for a treatise on "The Physiology and Pathology of the Pituitary Body," has been awarded to Dr. W. Blair Bell, of Liverpool.

DR. T. G. MOORHEAD (Captain, R.A.M.C.) has been elected professor of the practice of medicine in the school of the Royal College of Surgeons in Ireland, in the place of Sir John Moore, retired

EFFORTS are being made by the Kansas State Board to get the State universities to co-operate in an endeavour to induce the Government to establish a health experiment and research laboratory in connection with each university school of medicine under the U.S. Public Health Service.

THE Board of Education has recently issued an interesting Memorandum on the teaching of coal-mining in part-time schools (Circular 953; price 4*d*.), upon lines which constitute a departure to some extent from the methods of teaching coal-mining students that have hitherto obtained, in that they definitely recognise the principle already tacitly admitted by some of the most experienced teachers of mining, namely, that the subject in which coal-mining students least need instruction is that of coal-mining. The coal-mining communities may to-day claim to rank amongst the most intelligent of our working classes, a condition of things due largely to the fact that a man is required to pass a written examination before he can enter the ranks of the higher colliery officials. All British coalfields have accordingly arranged some system of mining tuition, and the object of the present Memorandum is to co-ordinate these, and to base the methods of instruction upon sound principles. The insistence upon a scientific training as the basis of all mining education is a welcome feature of this Memorandum, and there can be no doubt that its general adoption will prove useful. It is perhaps legitimate to regret that its wording is in places open to misconstruction; thus the expression "practical mathematics" is here used in the sense of elementary mathematics applied to practical purposes, instead of in its generally adopted sense; again, it is a pity that the term "mining science" is repeatedly used when the real meaning is science applied to mining. The main point, however, is that the Board of Education has now issued a definite scheme in which a systematic and progressive education in scientific principles is recognised as the correct method of training coal-mining students.

THE report of the Board of Education for the year 1914–15 (Cd. 8274) is now available. The period dealt with coincides almost exactly with the first year of the European war, and the report is consequently concerned largely with the dislocations and modifications in the educational services brought about by the conflict. For reasons of economy the Board has suspended the great bulk of its statistical work, and many of the illuminating tabular statements of previous years are wanting. The report not unnaturally emphasises the need for economy in the administration of the public services; but we notice with satisfaction the admission:—"We desire, however, to record our conviction that the claim to regard reductions of expenditure on the public service of education as true economies requires, in the case of every item, the most careful scrutiny." All grades of education are dealt with fully in the report, but it is possible here to refer to one or two points only. The demand for munitions of war has had two effects upon technical schools: first, many schools have been engaged in actual munition work, and, secondly, many schools have inaugurated experimental courses for the training of unskilled persons for the purpose. As to the number of students in attendance at continuation and technical schools in England, the report states that the number of evening and other part-time schools recognised by the Board for 1913–14 was 6269, and the number of individual students under instruction at any time during the year in these schools was 726,626. In the same year twenty-seven institutions providing instruction courses were recognised, the total number of such courses in them being seventy-eight. The number of institutions in which day technical classes were recognised in

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1913–14 was eighty-nine; the corresponding number for 1912–13 was 110, but this included institutions providing courses which in 1913–14 became junior technical schools. Up to and including 1914–15 there were forty-nine recognised junior technical schools, thirty-seven for boys and twelve for girls. The report contains also a survey of the influence of the war upon the work of universities and university colleges assisted by Treasury grants.

Science as "Cinderella" is the subject of an informing and suggestive article in a recent issue of the *Glasgow Herald,* and of a subsequent trenchant letter in the same journal by Prof. Soddy, F.R.S., which deals with the manner in which a certain large endowment intended for the promotion of scientific study and research is, and has been, diverted largely to other purposes of an entirely general educational character, which, however desirable to promote, were not the objects Mr. Carnegie had directly in view when making his generous gift of 1,000,000*l.* sterling in aid of the extension of the means of scientific investigation in the Universities of Scotland. It was perhaps too much to expect that a body of trustees, upon which there was, and is, only a very limited representation of men of distinction who were, or had been, actively engaged in scientific research, should regard that object as its first duty, but it is startling to learn how inadequately the interests of science have been served in the disposal of the income derived from the trust. The truth is that there is a lamentable lack of vital and intelligent interest in the sphere of science as an essential factor in the education of the nation, and as an indispensable instrument of its civilised progress. It is only by a thorough understanding of the phenomena of Nature and of man in all his activities and aspects, and through a firm grasp of the knowledge so gained, that humanity can rise to higher levels of well-being. The unfortunate attitude of the governing classes of the nation towards science is, as has been well said, largely "the result of the monastic traditions of the great public schools and universities in which most of our leading politicians have been trained." We need a genuine endowment of research, which shall have for its sole purpose the personal encouragement and support of the most gifted men of the time, who will give their whole energies to the pursuit of knowledge, assisted by men of proved competence. The teaching and training of the capable youth of the nation may well be left to the many able expounders of scientific theory and practice now available, who would draw their inspiration from the work of such men as are here indicated. We seek at this supreme crisis of our national history a man of clear vision and firm purpose who, taking all branches of knowledge for his province, will assign to each its true place and function in the education and training of all classes of the people. Such a man and such a purpose have yet to be achieved.

SOCIETIES AND ACADEMIES.

London.

Physical Society, June 30.—Prof. C. V. Boys, president, in the chair.—Dr. P. E. **Shaw** and C. **Hayes**: A sensitive magnetometer. A torsion balance of extreme delicacy carries a pair of purest silver balls, each 3 gm. weight. A solenoid, with horizontal axis passing through one of the silver balls, is brought close to the balance. On exciting the solenoid, divergent fields of known strength are obtained in the region of the ball. The resulting attraction of the ball to the solenoid is shown by a mirror reflecting a distant scale to a telescope. The couple on the torsion beam required to produce 1 mm. scale deflection is $4{\cdot}5 \times 10^{-7}$ dyne cm., and this torsion balance is 10^6 times as sensitive as any known to have been used previously in this kind of work. The results of these experiments are:—(1) The magnetic properties of the silver are ascertained even for weak fields of 1–10 gauss. (2) The silver has a pronounced retentivity, this effect being presumably due to the small trace of iron impurity. (3) The relation of susceptibility of the silver to the field used is found. The susceptibility of each of the constituent materials, (*a*) pure silver, (*b*) residual pure iron, appears to be greatly modified by the presence of the other material.—Dr. H. S. **Allen**: The latent heat of fusion of a metal, and the quantum-theory. A criticism is given of a theory of the process of fusion recently put forward by Ratnowsky. The author of the theory obtains an expression on certain assumptions for the entropy of a substance in the solid state. He then proceeds to deduce a simple formula suitable for use at high temperatures. It is shown that this formula is incorrect in consequence of the omission of a term in the expansion.—Prof. H. **Chatley**: Cohesion (part ii.).

Manchester.

Literary and Philosophical Society, May 9.—Prof. W. W. Haldane Gee, vice-president, in the chair.—Dr. E. **Newbery**: The theory of over-voltage. The author gave an account of the history and reasons for the study of over-voltage. The following points were discussed:—(1) Methods of measuring over-voltage, including the direct potential difference method, the "knickpunkt" method, the bubble-angle method, the oscillograph method, and the rotating commutator method. (2) The most important phenomena connected with, and controlling factors of, over-voltage. (3) The chief theories put forward to account for over-voltage. (4) The following theory was suggested—over-voltage of an electrode is determined by four factors:—(*a*) Supersaturation of the electrode surface with non-electrified gas under very high pressure, due to the permeability of the metal to the ionised gas, but non-permeability to the molecular and also to the spontaneous decomposition of the alloys containing the same gas. (*b*) Formation of a series of alloys or solid solutions of gas (or compound of gas and electrode substance) with the electrode surface. (*c*) Deficiency or excess of non-hydrated ions, charged and discharged, in the immediate neighbourhood of the electrodes. (*d*) Inductive action of the escaping ionised gas on the electrode.—R. F. **Gwyther**: The specification of stress. Part iv. (continued). The paper contains the stress relations for the most usual co-ordinate systems which were previously withheld. The method originally used to obtain the equations is retained, as the fact of the elimination of the displacement is of importance. The stress relations are consequently not limited in their application to specifically elastic stresses; they apply with equal effect to stress having only the general character of elastic stresses.

Paris.

Academy of Sciences, July 10.—M. Camille Jordan in the chair.—E. **Perrier**: Remarks on the book, "Les Allemands et la Science."—M. Gonessiat was elected a correspondant for the section of astronomy in the place of the late G. H. Hill; M. Walden a correspondant in the section of chemistry in the place of Emil Fischer; M. Bataillon a correspondant for the section of anatomy and zoology in the place of the late J. H. Fabre; and M. Depage a correspondant for the section of medicine and surgery in the place of the late Guido Bacelli.—M. **Akimoff**: The transcendants of

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